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EXAMINER

24M1/1031

ART UNIT

PAPER NUMBER

9

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2411

DATE MAILED:  
10/31/95

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 7/20/95 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- ☐ Notice of References Cited by Examiner, PTO-892.
- ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
- ☐ Notice of Art Cited by Applicant, PTO-1449.
- ☐ Notice of Informal Patent Application, PTO-152.
- ☐ Information on How to Effect Drawing Changes, PTO-1474.
- ☐

Part II SUMMARY OF ACTION

- ☒ Claims 85-125 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
- ☐ Claims \_\_\_\_\_ have been cancelled.
- ☐ Claims \_\_\_\_\_ are allowed.
- ☒ Claims 85-125 are rejected.
- ☐ Claims \_\_\_\_\_ are objected to.
- ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
- ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
- ☐ Formal drawings are required in response to this Office action.
- ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
- ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
- ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
- ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
- ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
- ☒ Other See Attached (Part III)

EXAMINER'S ACTION

PTO-200 (Rev. 2/93)

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**Part III DETAILED ACTION**

1. Claims 85-125 are presented for examination.
2. The text of those sections of Title 35, U.S.C. not included in this action can be found in the prior Office Action (Paper No. 6, mailed March 15, 1995).

***Claim Rejections - 35 USC § 112***

3. The 35 U.S.C. 112 rejection of Claim 95 is withdrawn. The Examiner has further studied the Specification and related art and understands the applicability of a cockpit like environment in the context of the invention.

As to Applicant's comments in Section II of Paper No. 8 regarding the 35 U.S.C. 103 rejection of Claims 90 and 91, the Examiner notes that the prior Office Action made note of the obviousness of highlighting a metaphor of interest, the goal described in Applicant's discussion at the first paragraph of Paper no. 8, Amendment C.

***Claim Rejections - 35 USC § 103***

4. Claims 85-125 are rejected under 35 U.S.C. § 103 as being unpatentable over "Cyberarts: Lanier of VPL on 'voomies,' and VR's future" by Linda Rohrbough and "Virtual reality: a status report" by Linda Jacobson in further view of 'Virtual Reality offers growing opportunity for risk takers' by Len Hindus;

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'Virtual Reality is almost real' by Paul Saffo; PV-Wave for Financial Applications; PV-Wave Command Language; PV-Wave Point and Click Visual Data Analysis Software.

As to Claims 85-125, the rejections set forth in the prior Office Action are incorporated herein by reference and are maintained.

***Response to Amendment***

5. Applicants' arguments filed July 20, 1995 have been fully considered but they are not deemed to be persuasive.

6. In the Remarks section of the July 20 amendment, the Attorney for Applicants discusses the rejections under 35 U.S.C. 35 U.S.C. 103. The Examiner will address the issues raised by Applicant in turn.

At Page 4 of Amendment C, in Remarks, Applicant first argues that the Rohrbough and Jacobson references are not enabling and therefore render improper obviousness rejections over them. These two references describe various facets of the art of virtual reality representation of systems. The two references describe the operation of such systems in terms of user manipulation of a virtual environment through such implements as data gloves and speech recognition, i.e. a user interface. Thus,

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these references disclose functionality at the user interface level.

Applicant's Disclosure similarly sets out the operation of the claimed invention at the user interface level. Such implementation as is described is set in terms of use of the WorldTool Kit library of C language routines (Page 3, line 13 to Page 4, line 5 of the Specification). In this passage, Applicant describes the WorldTool Kit as a well known example of an object oriented library of functions which can be used for the creation of virtual reality environments. Applicant has not provided any more detailed enablement such as a Code Appendix detailing the particular function calls to the WorldTool libraries. It is clear to the Examiner that providing enablement for Applicant's invention through the use of a well known code library similarly enables the references cited in the obviousness rejection of Claims 85-125. For this reason, the Examiner asserts that if Applicant's Specification is enabling at the user interface level, then the references cited in the prior Office Action and equivalently enabling and can thus serve as a basis for an obviousness rejection.

Applicant next argues that the references do not teach a virtual reality generator and that therefore the invention is non-obvious. Applicant describes the generator at the top of Page 5 of the Amendment in terms of what it does. The Examiner

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notes that while the Rohrbough reference lacks detail on the generator, the Jacobson reference discloses the VIEW system at Page 3, first full paragraph to third paragraph. The function of the VIEW system as disclosed by Jacobson is that of a virtual reality generator as described by Applicant in his arguments. Therefor, Jacobson is not lacking and can serve as a basis for an obviousness rejection.

In the discussion of the Rohrbough and Jacobson articles, Applicant states at Page 5 of the Amendment that:

... the Rohrbough article nowhere teaches or suggests a virtual reality generator module that displays a three dimensional virtual reality world that enables movement and interaction with the filtered financial information or enables the user to simulate movement through the virtual reality world such that the user has a sensation of travelling through and within the virtual reality world...

The Examiner observes that if either reference had taught these particular elements in total, a 35 U.S.C. 102 rejection would have been given. Rather, the combination of Rohrbough and Jacobson served as the basis for an obviousness rejection as set forth before.

Applicant then proceeds to restate arguments regarding the enablement provided by Rohrbough and Jacobson by stating that the Examiner admitted that these articles fail to provide an enabling disclosure of the present invention at Page 4 of the prior Office Action. In actuality, the Examiner's wording was as follows:

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Thus, the prior art clearly suggests use of a virtual reality generator to display financial information in a virtual reality world. While neither article teaches the details of the virtual reality system needed to implement this particular application, they both suggest that the level of skill for the ordinary artisan at the time of publication was such that no undue experimentation would have been needed. See for example, the Jacobson and Rohrbough articles which discloses several existing virtual reality applications by the University of North Carolina and VPL Research.

It is thus clear that the Examiner did not admit that the articles were non-enabling; she stated that they lacked particular detail of implementation and she then provided insight into the reasons whereby the detail would have been within the skill level of an ordinary artisan at the time of the invention. Similarly, Applicant's own enablement of his invention in terms of a general reference to the WorldTool Kit discussed above makes clear that given the functionality described in the cited references, one of ordinary skill would have been able to have made the invention without undue experimentation.

Applicant then proceeds at Page 8 of the Amendment to argue that CAD-based building and virtual molecule building applications of virtual reality have no implication for determining the level of ordinary skill in the art of financial systems. The premise of the argument is that the financial system maps abstract information to a virtual reality object and that a CAD-based building design system, as described in the references, would map the real object to a virtual reality

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object. This argument is fallacious because computer aided design (CAD) systems represent real world objects as databases of numbers, i.e. abstract information. Thus, there is no difference in the nature of the information mapped to either virtual reality object and the referenced inventions can suggest the level of skill in the art of a routineer.

In the argument presented at the beginning of Page 8 of the Amendment, Applicant suggests that the level of skill to make his invention exceeds that required to make the CAD-building and virtual molecule representations of the references. As a university graduate with a major in the biological sciences and several years employment experience in the accounting and financial areas, the Examiner asserts that the level of ordinary skill in the art of virtual molecule representation would be greater than the skills of a routineer in virtual representation of financial information, and that therefore, those artisans making the cited molecular invention would have been capable of making the claimed invention.

Applicant discusses the 132 declaration and its several elements. These will be addressed in turn.

At Paragraph 10 of the declaration, Applicant restates the arguments that the references cannot be combined because they are not enabled to allow one of ordinary skill to have made the invention based on the their disclosure. This argument has been

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addressed above. Applicant then states that making the invention would have required expertise in at least the fields of virtual reality and finance. The Examiner notes, however, that in an article submitted by Applicant, in Exhibit G, "AI lives Another Day on Wall Street", the author states at page 10, column 1, second full paragraph, that:

Marshall is not an AI expert. Nor is he a VR jock. His background is in the area of international arbitrage. But he realized that a \$2 billion portfolio with more than 900 stocks was too complex for a human to handle alone. So with his computer expert partner, he formed Maxus to create the Metaphor Mixer, or as he puts it, "the radar that will find the sunken treasure."

The Examiner understands that the Marshall referred to in the article is Applicant and it is clear that Applicant has impressive skills in the financial arena. Applicant's own submitted document argues against the need for substantial skills in the art of virtual reality to make his invention, however, given that he is no "VR jock" and that he made the invention. Thus, the argument that the cited references do not disclose sufficient information to implement this supposedly complex system must fail.

On Page 9, the argument concerning the enablement provided by Hindus, Saffo and PV-Wave articles is effectively a restatement of the comments on Rohrbough and Jacobson. The Examiner refers Applicant to the responses set forth above



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concerning enablement and teachings with regard to ordinary skill in the art.

Applicant argues that reliance on the 3-D graphical display business visualization program taught by PV-Wave is inapposite. Applicant admits that a user could generate a 3-D cartesian graph of financial information and navigate through the information using the invention of PV-Wave. It is clear to the Examiner that the step of utilizing a virtual reality interface to navigate through data representations such as those taught by PV-Wave would have been an obvious one because such interfaces were known and used in many applications such as those taught by Rohrbough and Jacobson, and provided effective data representation and manipulation.

In the first full paragraphs of Page 10 of the Amendment, Applicant argues that the cited references do not teach or suggest a virtual reality financial system. The Examiner responds that the Jacobson reference, at its last page, specifically teaches the application of virtual reality to stock market predictions, sales forecasts and factory problem analyses. This was cited in the prior Office Action.

In the second full paragraph of Page 10 of the Amendment, Applicant argues that various elements are not taught by the references. At the third Page of Jacobson, first through third complete paragraphs, Jacobson discloses VIEW, which clearly

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generates a virtual reality representation. A user interface is taught as data gloves and speech recognition in the first complete paragraph and clearly suggests the necessity of an user interface module. Finally, input in the form of data input is taught by Jacobson at paragraphs four and five of the third page. Thus, the elements cited by Applicant as lacking in the references are clearly present and can constitute elements of an obviousness rejection.

In consideration of the 132 evidence presented the Examiner has reviewed Exhibits A-H. Concerning those items indicating commercial success, Applicant has provided no evidence linking the showing of commercial success with the particular invention as claimed. "Affadavits or declarations attributing commercial success to the invention 'described and claimed' or other equivalent indefinite language have little or no evidentiary value". MPEP 716. Moreover, Applicant's own submitted documentation contains evidence arguing against commercial success. An article in Exhibit G, "ABD's Global Traders Test Virtual Reality" by William Pesek quotes Stan D. Moskowitz as saying that:

Most investment bankers I've dealt with still like to see the numbers on a spreadsheet.

and concerning Metaphor Mixer

...might make life easier for some traders, but I don't know if it could be a big seller.

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In discussion of the other documents cited, Applicant argues that these indicate that his invention is "innovative" and the "first". While this may be true, the issue at hand is one of non-obviousness rather than novelty. As set forth above, the references cited in the prior Office Action do indeed teach elements of virtual reality representations and clearly suggest and make obvious the application of this technology to representation of financial systems.

For the reasons set forth above, Applicants' arguments are deemed to be non-persuasive and the rejections set forth in the First Office Action are maintained.

#### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kyle whose telephone number is (703) 305-9769.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3800.

*CRK*

CRK

October 20, 1995

*David M. Huntley*

DAVID M. HUNTLEY  
PRIMARY EXAMINER  
GROUP 2400